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gyrie, etc. In this second part he presents the results of his investigations on seven foetal brains. The age is inferred from the length of the longitudinal fissure. This in the smallest specimen was 1.5 cm., and in the largest 5.1 cm. In the younger specimens there appeared, on all parts of the cerebral vesicle, longitudinal and transverse foldings which later disappeared. This disappearance was quite complete in a brain in which the longitudinal fissure was 3.2 cm., and is caused by the distending action of the blood-vessels. The sulcus calloso-marginalis, as well as its prolongations the fiss. parieto-occipitalis and calcarina, arise by pressure from the outside. After the longitudinal fissure has reached a length between from 4.7 to 5.1 cm., invaginations and infoldings of the walls of the hemispheres do not occur, but only secondary sulci develop. These are not due to an excessive growth of the gray matter, but to a retardation of growth along certain lines, with a concomitant development between these lines. The energy of development differs, therefore, in the different parts of the cortex, and this difference is explained as due to the motions of the foetal brain. Each contraction of the heart causes a pulsation of the walls of the hemispheres, and these pulsations, passing as waves on the surface of the brain, have constant lines of interference. Along these lines of interference the development of the ganglion cells is retarded, and so a depression or sulcus is developed. As the brain enlarges, new lines of interference and consequently new sulci are being continually developed. Besides these pulsations, which are one factor, the irregularities in growth and the mechanical action of the skull are both to be taken into account, as stated above.

Das Rindenfeld des Facialis und seine Verbindungen bei Hund und Kaninchen. S. EXNER und J. PANETH. Arch. f. d. ges. Phys. XLI, S. 349.

It is found that the cortical centre for the facialis on one side controls the facialis muscles on both sides, and it is therefore suggested that those muscles which are habitually innervated on both sides simultaneously may be controlled from a single cortical centre. The best evidence for this generalization is found in the relations of the facial centre in the rabbit. In this case, the stimulation of the facial centre causes in all cases movements of the muscles of the face on both sides. Cutting under the portion of the cortex stimulated, stopped the contractions on both sides. An attempt was then made to trace the course of the impulse going to the muscles on the same side as that to which the stimulus was applied. The section of all commissures and the extirpation of the facial centre in the other hemisphere did not interfere with the reaction. Longitudinal section of the medulla did, however, stop it. It is inferred from this that the fibres connected with the nucleus on the same side first cross completely somewhere higher up, and that the impulse passes from the opposite to the same side at the level of the nuclei themselves.

Untersuchungen über die feinere Anatomie des Gehirns der Teleostier. R. FUSARI. Internat. Monatsschrift für Anatomie u. Physiologie, IV, 7-8, S. 275.

From studying the brain of certain teleosts, the author reaches the conclusion that in general the brains of lower vertebrates do not

differ essentially from those of the higher. He used Golgi's method of staining, and in this paper reports on the cerebellum, valvula cerebelli, and lobus opticus. The two types of nerve fibres and the two of nerve cells as described by Golgi are here found. The neuroglia cells are best distinguished from the nerve cells by the absence of the axis-cylinder process. The epithelial cells surrounding the central canal and its prolongations are conical, with their bases towards the canal, and their conical end is continued into one or more filaments which unite with neuroglia cells, thus indicating the epiblastic origin of the latter. Regarding the differentiation of nerve cells, the author adds that the extraordinary development and profuse branching of the large cells of the outer layer of the cerebellum show how ungrounded the theory is that the higher the animal in the zoological scale, the greater will be the number of prolongations, and the more profuse the branching of homologous nerve cells.

Ueber einen Fall von chronischer progressiver Lähmung der Augenmuskeln. C. WESTPHAL. Ophthalmoplegia externa nebst Beschreibung von Ganglienzellengruppen im Bereich des Oculomotorius-kerns. Arch. f. Psychiatrie und Nervenkr. XVIII, 3, S. 846.

In a case of dementia paralytica, with symptoms of tabes and partial atrophy of the left half of the tongue, there was complete paralysis of the muscles of both eyeballs. The pupils did not react to light, but did react on convergence. The post-mortem examination, both macroscopic and microscopic, showed the nuclei and stems of the motor nerves of the eye atrophic. There was, however, dorsad of the atrophic oculomotor nucleus, on both sides, a double group of cells still intact, which, though not described in the adult, have been known as connected with the nucleus of the oculomotor nerve through the experiments of von Gudden on newborn rabbits, and the studies of Edinger and Darkschewitsch on the human foetus. On comparing the specimens with the same region in the normal brain, the groups in question could always be identified in the normal. This group of cells is brought by the author into connection with the iris, which was the only muscle in the eye which in this case remained active, and for this view he advances some indirect evidence, partly physiological and partly anatomical. The failure of the iris to react to light is explained by some break in the sensory portion of the reflex arc.

Die Untersuchungen von Golgi über den feineren Bau des centralen Nervensystems. A. KÖLLIKER. Anat. Anzeiger II, 15, S. 480.

Kölliker upholds Golgi's views regarding the anastomosis of the branched processes from the nerve cells, between which he can never find any union. Though recognizing the two types of cells which Golgi describes, namely, one in which the axis-cylinder gives off few branches and maintains its identity, and the other in which it soon profusely branches, forming a network in which the identity of the axis-cylinder is lost, he refuses to give assent to Golgi's suggestion that the former type may be motor and the latter sensory in function. The axis-cylinder prolongations of the cells of Purkinje do maintain their identity and at the same time give off fine lateral